

CLAIMS

1. A fall arrest device characterised by:
 - 5 a U-shaped member (3, 5) adapted to accommodate a track (7) of a fall arrest system;
 - 10 a cam member (15, 17; 81, 83; 87, 89) including an actuating arm (21; 85) and a cam portion (19), the cam member being pivotably mounted on the device such that the cam portion is movable towards the U-shaped member so as to lock the track between the cam portion and an internal surface of the U-shaped member in the event of a fall;
 - 15 biasing means (22) urging the cam member to a position in which the cam portion is adapted to allow the track to pass between the cam portion and the internal surface of the U-shaped member;
 - 20 actuating means (27; 93) adapted in the event of a fall to engage with the actuating arm or the cam member and to cause the cam member to pivot against the biasing force of the biasing means such that the cam portion locks the track; and
 - 25 friction means (55) adapted in use to engage with the track such that at least a predetermined minimum load is required to cause the device to move relative to the track.
- 30 2. A device as claimed in claim 1, characterised in that two U-shaped members (3, 5) are provided, the U-shaped

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members being spaced in the axial direction of the path of a track (7) through the device.

3. A device as claimed in claim 1 or 2, characterised in
5 that the actuating arm (85) of the cam member (81, 83) is provided with guide flanges (91) for the actuating means (27).

4. A device as claimed in claim 1, 2 or 3, characterised
10 in that the device includes two cam members (15, 17; 81, 83; 87, 89), the cam members being adapted to be actuated by movement of the actuating means (27; 93) in generally opposing directions.

15 5. A device as claimed in any preceding claim, characterised in that the biasing means (22) comprises a torsion spring.

20 6. A device as claimed in any preceding claim, characterised in that the biasing means (22) is adapted to maintain the cam member (15, 17; 81, 83; 87, 89) in position until a threshold load is applied thereto.

25 7. A device as claimed in any preceding claim, characterised in that the actuating means (27; 93) is pivotably mounted on the device.

30 8. A device as claimed in any preceding claim, characterised in that the actuating means (27; 93) is movable in a direction towards and away from the path of the track (7) through the device.

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9. A device as claimed in claim 8, characterised in that the actuating means (27; 93) is movable in a direction substantially perpendicular to the path of the track (7).

5 10. A device as claimed in any preceding claim, characterised in that the actuating means (27; 93) includes a lever (31; 95) adapted to engage the cam member (15, 17; 87, 89).

10 11. A device as claimed in claim 10, characterised in that the lever (31) is slidably engaged with an arcuate slot (35) provided in the cam member (15, 17).

15 12. A device as claimed in any preceding claim, characterised in that the actuating means (27) engages directly with the cam member (15, 17).

20 13. A device as claimed in any preceding claim, characterised in that the actuating means (27; 93) is provided with an aperture (29) for receiving fastening means (63; 71) for securing a user to the device.

25 14. A device as claimed in claim 13, characterised in that the device includes a plate (9, 45) extending in a plane substantially parallel to the actuating means (27; 93) and provided with an aperture (11, 46) for receiving the fastening means (63; 71).

30 15. A device as claimed in claim 14, characterised in that two spaced plates (9, 45) are provided, one plate being positioned on either side of the actuating means (27).

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16. A device as claimed in claim 14 or 15, characterised in that the aperture (11, 46) in the plate (9, 45) is curved.

5 17. A device as claimed in claim 16, characterised in that the aperture (11, 46) in the plate (9, 45) includes a portion at least at one end thereof extending in a direction substantially parallel to the axial direction of the path of the track (7) through the device.

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18. A device as claimed in any one of claims 14 to 17, characterised in that an intermediate member (71) is provided; the intermediate member extending through the aperture (29) in the actuating means (27) and through the aperture (11, 46) in the or each plate (9, 45), for connecting to a fastening means (63).

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19. A device as claimed in any preceding claim, characterised in that the friction means (55) comprises a cylindrical post, the axially extending surface of the post being adapted to engage the track (7).

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25 20. A device as claimed in claim 19, characterised in that two cylindrical posts (55) are provided, the posts being spaced in the axial direction of the path of the track (7) through the device.

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21. A device as claimed in claim 20, characterised in that the cylindrical posts (55) are in the region of opposite ends of the device.

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22. A device as claimed in any preceding claim, characterised in that the friction means (55) is movable towards and away from the path of the track (7).

5 23. A device as claimed in any preceding claim, characterised in that the friction means (55) is adapted to exert a force on the track (7) such that a predetermined minimum load is required to move the device relative to the track.

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24. A device as claimed in claim 23, characterised in that the predetermined load corresponds to a load less than 5 kg.

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25. A device as claimed in claim 23 or 24, characterised in that the predetermined load corresponds to a load greater than the weight of the device.

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26. A device as claimed in any preceding claim, characterised in that the friction means (55) includes means (59) biasing the friction means towards the path of the track (7).

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27. A device as claimed in claim 26, characterised in that the biasing means (59) comprises a compression spring.

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28. A device as claimed in any preceding claim, characterised in that the friction means (55) comprises means (61) for (manually) moving the friction means away from the path of the track (7).

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29. A device as claimed in claim 28, characterised in that the means for moving the friction means (55) comprises a release button (61).

5 30. A device as claimed in any preceding claim, characterised in that the device includes a lock plate (39) which is (manually) movable towards and away from the path of the track (7) through the device, the lock plate including biasing means (43) adapted to bias the plate to
10 a position in which it co-operates with the U-shaped member (3, 5) to prevent the device being removed from the track.

15 31. A device as claimed in claim 30, characterised in that the lock plate (39) is spaced from the U-shaped member (3, 5) in the locking position to allow the device to pass over intermediate posts of the fall arrest system.

20 32. A device as claimed in claim 30 or 31, characterised in that the biasing means (43) of the lock plate (39) comprises a torsion spring.

25 33. A device as claimed in claim 30, 31 or 32, characterised in that the lock plate (39) includes a release button (49) for moving the lock plate in a direction away from the U-shaped member (3, 5) against the force of the biasing means (43).

30 34. A fall arrest system comprising a track (7), an intermediate bracket (65, 101) and a device as claimed in any preceding claim, characterised in that the intermediate bracket (65, 101) is formed intermediate end portions

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thereof with inclined faces whereby a portion of the track is exposed intermediate the end portions for engagement with the friction means (55) and with the cam portion (19) of the fall arrest device.

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35. A system as claimed in claim 34, characterised in that the track (7) is in the form of a cable.

36. A system as claimed in claim 34 or 35, characterised
10 in that the intermediate bracket (101) is formed
intermediate end portions thereof with inclined faces
whereby a portion of the track (7) intermediate the end
portions is exposed for engagement with the internal
surface of the U-shaped member (3, 5) of the fall arrest
15 device.

37. A system as claimed in claim 36, characterised in that
the end portions of the intermediate bracket (101) are
interconnected by means lateral connecting portions
20 provided at each side of the track.

38. A system as claimed in claim 36 or 37, characterised
in that the end portions of the intermediate bracket (101)
are formed with divergent faces, one of which faces is
25 adapted to engage the friction means (55) and the other of
which faces is adapted to engage the internal surface of
the U-shaped member (3, 5).